

Amendments to the Claims

Claims 1-35 (Canceled)

Claim 36 (Currently Amended) An apparatus for plating a surface of a substrate to fill a wiring recess in the surface with a metal, said apparatus comprising:

- a frame;
- a load/unload unit on which the substrate is held;
- a transfer mechanism disposed in said frame; and
- a plurality of processing units disposed in said frame so as to surround said transfer mechanism, said processing units including:

- an electroless plating unit for performing an electroless plating process to form an initial layer on the substrate; and

- an electrolytic plating unit for performing an electrolytic plating process to fill the wiring recess with the metal while the initial layer serves as a feeding layer,

- wherein said electroless plating unit includes:

- a seal packing to be brought into contact with the substrate;
 - a plating cell for forming a hermetically sealed space with the substrate and said seal packing, the hermetically sealed space having a volume sufficient for receiving a minimum amount of an electroless plating liquid required for the electroless plating process; and
 - a turntable for holding the substrate so that the substrate is cleaned and dried after the electroless plating process.

Claim 37 (Previously Presented) An apparatus according to claim 36, wherein said transfer mechanism is linearly movable.

Claim 38 (Canceled)

Claim 39 (Previously Presented) An apparatus according to claim 36, wherein said processing units also include a cleaning and drying device for cleaning and spin drying the substrate after the electrolytic plating process.

Claim 40 (**Canceled**)

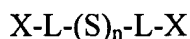
Claim 41 (**Previously Presented**) An apparatus according to claim 36, wherein said processing units also include a pretreatment unit for performing a pre-treatment process of the electroless plating process.

Claim 42 (**Previously Presented**) An apparatus according to claim 36, wherein said electrolytic plating unit comprises an electrolytic plating bath having a plating liquid comprising copper sulfate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) having a concentration of 100 to 250 g/l.

Claim 43 (**Previously Presented**) An apparatus according to claim 36, wherein said electrolytic plating unit comprises an electrolytic plating bath having a plating liquid comprising sulfuric acid (H_2SO_4) having a concentration of 10 to 100 g/l.

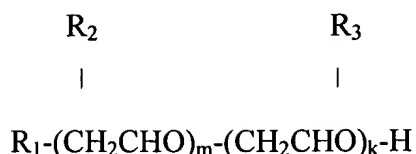
Claim 44 (**Previously Presented**) An apparatus according to claim 36, wherein said electrolytic plating unit comprises an electrolytic plating bath having a plating liquid comprising chlorine ions having a concentration of 0 to 100 mg/l.

Claim 45 (**Previously Presented**) An apparatus according to claim 36, wherein said electrolytic plating unit comprises an electrolytic plating bath having a plating liquid comprising at least 0.14 to 70 $\mu\text{mol/l}$ of a sulfur compound expressed by a formula



where L is an alkyl group having a carbon number of 1 to 6 which is substituted by a lower alkyl group, a lower alkoxy group, a hydroxyl group, or a halogen atom; n is an integer; and X is a hydrogen atom, a $-\text{SO}_3\text{M}$ group, or a $-\text{PO}_3\text{M}$ group; and M indicates a hydrogen atom, an alkali metal atom, or an amino group.

Claim 46 (**Previously Presented**) An apparatus according to claim 36, wherein said electrolytic plating unit comprises an electrolytic plating bath having a plating liquid comprising at least 10 to 5000 mg/l of a macromolecular compound expressed in a formula



where R₁ indicates a residue of a higher alcohol group having a carbon number of 8 to 25, a residue of an alkyl phenol with an alkyl group having a carbon number of 1 to 25, a residue of an alkyl naphthol with an alkyl group having a carbon number of 1 to 25, a residue of a fatty acid amide having a carbon number of 3 to 22, a residue of an alkylamine having a carbon number of 2 to 4, or a hydroxyl group; R₂ and R₃ indicate a hydrogen atom or a methyl group; and m and k indicate an integer from 1 to 100.

Claim 47 (Previously Presented) An apparatus according to claim 36, wherein said electrolytic plating unit comprises an electrolytic plating bath having a plating liquid comprising at least 0.01 to 100 mg/l of a nitrogen compound.

Claim 48 (Previously Presented) An apparatus according to claim 36, wherein said frame is rectangular in shape.

Claim 49 (Previously Presented) An apparatus according to claim 36, wherein said electroless plating unit also includes a waste liquid tank for receiving the electroless plating liquid that has been used for the electroless plating process, without circulating the electroless plating liquid.

Claim 50 (Previously Presented) An apparatus according to claim 36, wherein said electroless plating unit further includes a cleaning nozzle for ejecting a cleaning liquid to a surface of the substrate to clean the substrate after the electroless plating process.

Claim 51 (Previously Presented) An apparatus according to claim 36, wherein said turntable is configured to be rotated at a high rate of speed to dry the substrate after the electroless plating process.